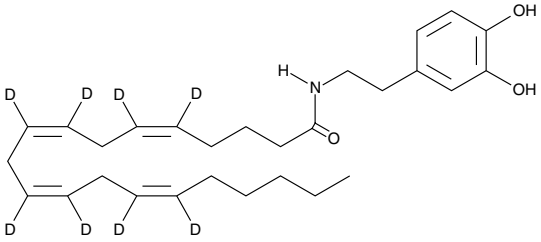
Product Information

N-Arachidonoyl Dopamine-d_8

Item No. 10007431

CAS Registry No.:	1159908-42-5
Formal Name:	N-[2-(3,4-dihydroxyphenyl)ethyl]-5Z,8Z,11Z,14Z-eicosatetraenamide-5,6,8,9,11,12,14,15-d_8
Synonym:	NADA-d_8
MF:	$C_{28}H_{33}D_8NO_3$
FW:	447.6
Chemical Purity:	≥98%
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_8); ≤1% d_0
Stability:	≥1 year at -20°C
Supplied as:	A solution in ethanol
UV/Vis.:	λ_{max}: 205, 283 nm



Laboratory Procedures

N-Arachidonoyl dopamine-d_8 (NADA-d_8) contains eight deuterium atoms at the 5, 6, 8, 9, 11, 12, 14, and 15 positions. It is intended for use as an internal standard for the quantification of NADA by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that NADA-d_8 be stored as supplied at -20°C. It should be stable for at least one year.

NADA-d_8 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. NADA-d_8 is miscible in these solvents.

NADA-d_8 is used as an internal standard for the quantification of NADA by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Several different arachidonoyl amino acids, including NADA, have been isolated and characterized from bovine brain.[1] NADA is the amide of the neurotransmitter dopamine and arachidonic acid. NADA is a CB_1-selective cannabinoid agonist, inducing the typical tetrad of hypothermia, analgesia, catalepsy, and hypomotility in rats which exceeds that of anandamide (AEA).[2] NADA is a full agonist at the vanilloid receptor 1, but is inactive on the dopaminergic D1 and D2 receptors. NADA is also a potent inhibitor (IC_{50} = 0.25 µM) of the proliferation of MCF-7 breast carcinoma cells. Recent reports of NADA's endothelium-dependent vasodilation indicate that some of its cannabinergic activities antagonized by SR141716A may be non-CB_1/CB_2 dependent.[3]

References

1. Huang, S.M., Bisogno, T., Petros, T.J., *et al.* Identification of a new class of molecules, the arachidonyl amino acids, and characterization of one member that inhibits pain. *J. Biol. Chem.* **276(46)**, 42639-42644 (2001).
2. Bezuglov, V., Bobrov, M., Gretskaya, N., *et al.* Synthesis and biological evaluation of novel amides of polyunsaturated fatty acids with dopamine. *Bioorg. Medicinal Chem. Letters* **11**, 447-449 (2001).
3. Randall, M. and Maxey, K.M. Personal Communication.

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